

ANNOTATIONES ZOOLOGICAE JAPONENSES

Volume 45, No. 4—December 1972

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Published by the Zoological Society of Japan

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Helminth Fauna of Bats in Japan XII

*With 10 Text-figures*

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**ABSTRACT** A new cestode parasitic to the common horseshoe bat, *Rhinolophus ferrumequinum*, is described from Kumamoto Prefecture under the name of *Hymenolepis tsuzurasensis*. At the same time, two other species of cestodes, *Hymenolepis rashomonensis* and *Vampirolepis isensis*, are recorded from horseshoe bats collected in the limestone caves of the same prefecture.

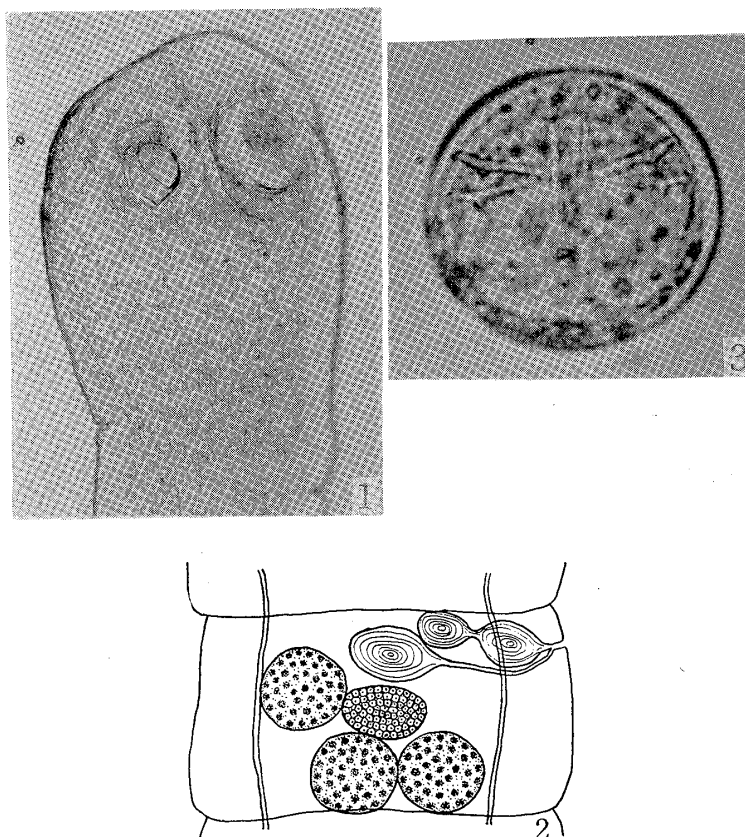
*Hymenolepis tsuzurasensis* n. sp.

On November 23rd, 1971, the writer collected five *Rhinolophus ferrumequinum* in the limestone cave called Tsuzurase-dô lying in Itsuki Village of Kumamoto Prefecture. Two of the five bats were found infected with three or four cestodes of the genus *Hymenolepis*.

*Specific diagnosis.* Length of strobilas about 20 to 23 mm by a maximum width of about 0.70 to 0.76 mm; toward the posterior end, margins of proglottides not serrate. Strobila consists of about 93 to 100 proglottides. Scolex 0.415 to 0.484 mm by 0.249 to 0.277 mm. Unarmed suckers developed, 0.079 to 0.124 mm in diameter. Rostellum absent. Neck 0.553 to 0.622 mm long and 0.138 to 0.207 mm wide. Genital pores unilateral, without any noted exception, located anterior to the middle of proglottid, i.e. at about anterior fifth in mature proglottides.

The internal structure was observed in a number of stained whole mounts. Testes 3 in number, 0.049 to 0.063 mm in diameter, one poral and two antiporal in position, arranged triangularly. Internal seminal vesicle 0.070 mm by 0.056 mm and external seminal vesicle 0.063 by 0.035 mm. Cirrus sac very small; cirrus unarmed. Seminal receptacle about 0.084 mm by 0.056 mm. Ovary subspherical, 0.105 mm by 0.056 mm, situated near the middle of proglottid. Uterus appears early in strobila as spherical body which gradually enlarges to fill entire gravid proglottid. Vitellin gland not evident. Egg spherical, 0.039 to 0.046 mm in diameter. Onchosphere spherical or oval, 0.032 to 0.035 mm in diameter; hooklets of the hexacanth embryo about 0.014 mm in length.

*Discussion.* Compared with other bat cestodes of the same genus, the present



Figs. 1-3. *Hymenolepis tsuzurasensis* n. sp.—1. Scolex ( $\times 80$ ).—2. Outline tracing of mature segment.—3. Onchosphere ( $\times 950$ ).

species resembles *Hymenolepis iriei* Sawada, 1972, but it seems to differ from the latter in the feature of scolex, especially in the position of suckers at the scolex and in the size of suckers.

*Host* : *Rhinolophus ferrumequinum*.

*Habitat* : Small intestine.

*Locality and date* : Itsuki, Kumamoto Prefecture; November 23rd, 1971.

*Type depository* : Biological Laboratory, Nara University of Education, Nara, Japan.

### *Hymenolepis rashomonensis* Sawada

On 23rd, November, 1971, five specimens of *Rhinolophus ferrumequinum* were collected in the cave called Hakiai-dô in Itsuki Village of Kumamoto Prefecture. Three of the five bats were found parasitized by cestodes belonging to the genus *Hymenolepis*.

*Diagnosis*. Strobila length 20 to 27 mm; maximum width at posterior end of

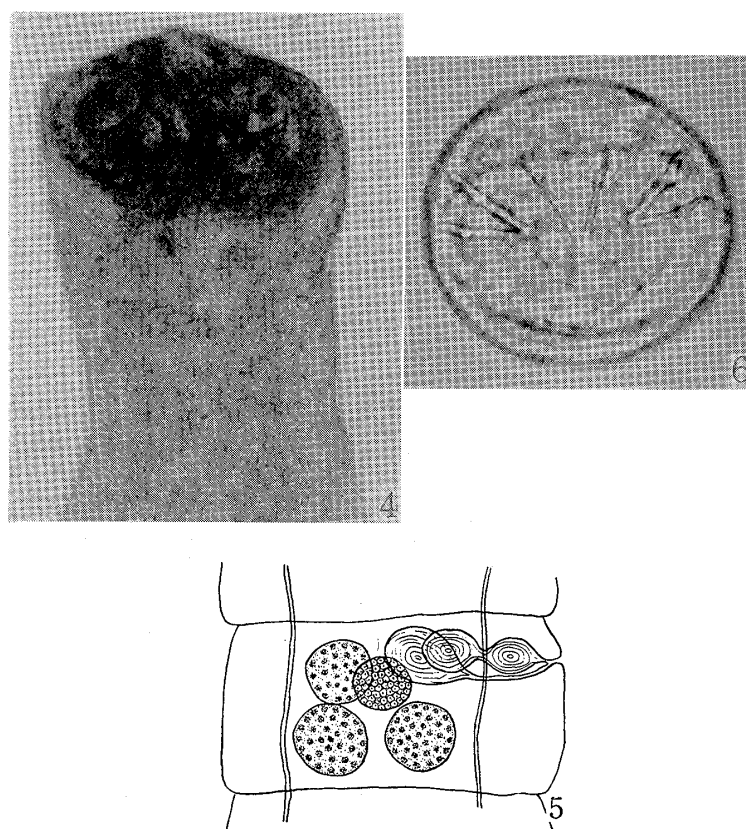


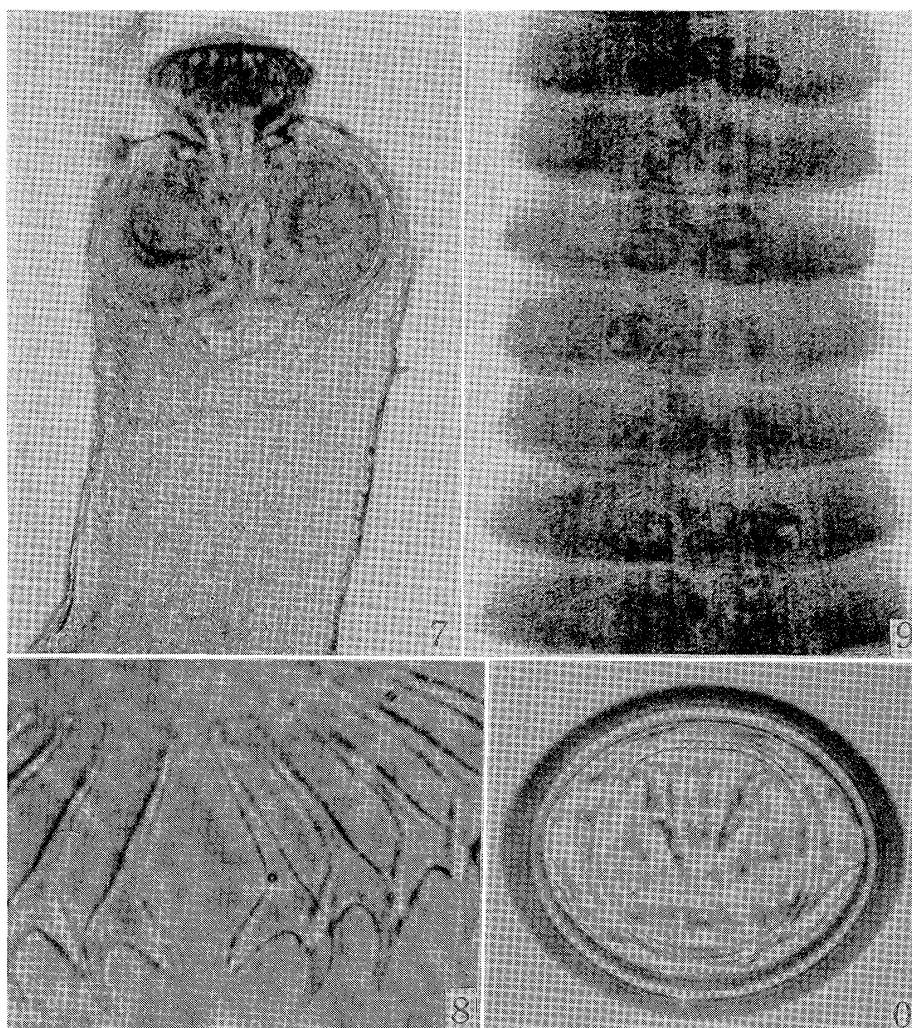
Fig. 4-6. *Hymenolepis rashomonensis*.—4. Scolex ( $\times 70$ ).—5. Outline tracing of mature segment.—6. Onchosphere ( $\times 950$ ).

strobila 0.62 to 0.66 mm. Scolex 0.249 to 0.277 mm in diameter. Suckers unarmed, 0.097 to 0.111 mm in diameter. Rostellum rudimentary. Proglottides about 110 in number. Genital pores unilateral, in anterior one-fifth of proglottid. Cirrus sac very small. External and internal seminal vesicles present. Testes 3 in number, arranged in the form of triangle. Ovary oval, 0.035 mm by 0.056 mm. Egg 0.042 to 0.049 mm in diameter. Onchosphere spherical, 0.028 to 0.032 mm in diameter; embryonic hooklet 0.014 mm long.

#### *Vampirolepis isensis* Sawada

On 22nd, November, 1971, three specimens of *Rhinolophus cornutus* were collected in the limestone cave called Nichikô-dô in Sakamoto Village of Kumamoto Prefecture. All the bats were found parasitized by cestodes belonging to *Vampirolepis*.

**Diagnosis.** Strobila 45 to 55 mm in length, 0.9 to 1.3 mm in maximum width, consisting of about 530 to 550 proglottides. Scolex 0.180 to 0.235 mm wide. Suckers 0.084 to 0.091 mm in diameter. Rostellum well developed, 0.105 to 0.119 mm in



Figs. 7-10. *Vampirolepis isensis*.—7. Scolex ( $\times 75$ ).—8. Rostellar hooks ( $\times 1000$ ).—9. Mature segments ( $\times 80$ ).—10. Onchosphere ( $\times 800$ ).

width, armed with a single row of 26 hooks, 0.032 mm long. Genital pores unilateral, located anterior to the middle of proglottid margin. Testes 3 in number, one poral and two antiporal in position; arranged in a transverse row. Egg 0.035 mm by 0.042 mm. Onchosphere spherical, 0.021 to 0.025 mm; embryonal hook about 0.014 mm in length.

#### ACKNOWLEDGEMENT

Thanks are due to Mr. T. Irie, Seiseiko High School, and M. S. Arai, student of Kumamoto University, for generous assistance in collecting bats in the limestone caves.

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